CLAIMS

What is claimed is:

1. A method for generating a graphical image on a display from data describing an object, the display including a plurality of positions, each of the plurality of positions having an area, the method comprising the steps of:

(a) determining if a portion of the object intersects a current position of the plurality of positions and providing an output if the portion intersects the current position;

(b) providing a mask for the portion if it is determined that the portion intersects the current position, the mask indicating an extent to which the one portion occupies the area of the current position;

(c) using the mask to provide antialiasing;

(d) repeating steps (a)-(c) for each object; and

(e) repeating steps (a) through (d) for each of the plurality of positions.

2. The method of claim 1 wherein the current position includes a plurality of sub-areas, wherein the mask indicates a portion of the plurality of the subareas occupied by the and wherein the utilizing step (c) further includes the steps of:

(c1) using the at least one mask to blend information relating to the at least one portion for the portion of the subareas.

3. The method of claim 2 wherein the plurality of subareas further comprise a number of subareas and wherein the utilizing step (c) further includes the steps of:

(c2) summing the information for each of the plurality of subareas to provide a resultant; and

(c3) dividing the resultant by the number of subareas.

4. The method of claim 1 wherein each of the plurality of positions is a pixel and wherein the current position is a current pixel on the display.

5. The method of claim 4 comprising the step of:

(f) removing the portion if the portion is obstructed.

6. The method of claim 5 further comprising the step of:

(g) sorting each portion based on the z-value.

7. The method of claim 6 wherein the repeating step (d) further includes the step of:

(e1) repeating steps (a) through (c) and steps (f) through (g) for each object.

8. The method of claim 7 wherein the repeating step (d) further includes the step of:

(e1) repeating steps (a) through (c) and steps (f) through (g) for each of the plurality of positions.

9. A method for generating a graphical image on a display from data describing a

plurality of objects, the display including a plurality of positions, each of the plurality of positions having an area, the method comprising the steps of:

(a) determining if a portion of each of the plurality of objects intersects each of the plurality of positions;

(b) providing a mask for each of the plurality of positions that the portion intersects, the mask indicating an extent to which the portion occupies the area each of the plurality of positions; and

(c) using the mask to provide antialiasing for each of the plurality of positions that the portion interests.

10. A system for generating a graphical image on a display from data describing an object, the system comprising:

a display including a plurality of positions, each of the plurality of positions having an area;

a processor block coupled with the display, the processor block for determining if a portion of the object intersects a current position of the plurality of positions and providing an output if the portion intersects the current position;

an interpolator coupled with the processor block, the interpolator for interpolating the data and providing a mask for the portion, the mask indicating an extent to which the portion occupies the area of current position; and

means for utilizing the mask to provide antialiasing;

wherein the plurality of positions are rendered in raster order.

11. The system of claim 10 wherein the current position includes a plurality of subareas, wherein the mask indicates a portion of the plurality of the subareas occupied by the portion, and wherein the utilizing means further includes:

means for using the mask to blend information relating to the portion for the portion of the subareas.

12. The system of claim 11 wherein the plurality of subareas further comprise a number of subareas and wherein the buffer is further used to sum the information for each of the plurality of subareas to provide a resultant and to divide the resultant by the number of subareas.

13. The system of claim 12 wherein each of the plurality of positions is a pixel and wherein the current position is a current pixel on the display.

14. The system of claim 13 further comprising:

means for sorting each of the at least one portion based on the z-value.

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15. The system of claim 14 wherein the sorting means further comprise:

an obstructed object identifier/removal unit coupled with the processor block and the interpolator, in response to the output and without determining a precise axial position of the portion, the obstructed object identifier/removal unit identifies if the portion is visually obstructed and removes data relating to the portion if the portion is obstructed; and

a hardware sorter coupled to the interpolator and the buffer for sorting the at

least one portion for the current position based on the z-value of the at least one portion.

16. A system for generating a graphical image on a display from data describing a plurality of objects, the display including a plurality of positions, each of the plurality of positions having an area, the system comprising:

a display including a plurality of positions, each of the plurality of positions having an area;

an interpolator coupled with the processor block, the interpolator including

means for utilizing the mask to provide antialiasing

means for determining if a portion of each of the plurality of object intersects each of the plurality of positions;

means for providing a mask for each of the plurality of positions that the portion intersects, the mask indicating an extent to which the portion occupies the area each of the plurality of positions; and

means for using the mask to provide antialiasing for each of the plurality of positions that the portion interests.